| | Application No. | Applicant(s) |
| **Notice of Allowability** | 09/854,635 | SALMENKAITA ET AL. |
| | Examiner | Art Unit | |
| | Neveen Abel-Jalil | 2165 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *March 2, 2005*.

2. ☒ The allowed claim(s) is/are *1-62*.

3. ☒ The drawings filed on *May 15, 2001* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All    b) ☐ Some*    c) ☐ None  of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

    Paper No./Mail Date _____.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

**CHARLES RONES**
**PRIMARY EXAMINER**

## DETAILED ACTION

### Remarks

1.      The Amendment filed on March 2, 2005 has been received and entered.  Claims

1-62 are pending.


2.      An examiner's amendment to the record appears below.  Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided by

37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no

later than the payment of the issue fee.

         Authorization for this examiner's amendment was given in a telephone interview

with Mr. Joseph C. Redmond, Jr. (Attorney of Record) on March 31, 2005.


3.      The application has been amended as follows:

         This listing of claims will replace all prior versions, and listings, of claims in the

application:


**Listings of Claims:**

Claim 1 (Currently Amended): A method to enable a wireless device to provide

recommendations to it's a user that is appropriate to the device's current environment,

comprising:

         receiving sensor signals characterizing a current environment of the wireless

device;

         processing the sensor signals with a context inference engine;

outputting a current context result from the processing by the context inference engine;

forming a context-activity pair by selecting an activity and pairing it with the current context result;

searching a database of recommendations using the context-activity pair without user identification wherein the database of recommendations comprises a table listing context-activity pairs each related to (i) a listing of service recommendations and (ii) a listing of number times recommended for each service recommendation; and

providing recommendations to the user in response to the searching step.

Claim 2 (Previously Presented): The method of claim 1, wherein the processing of the sensor signals with a context inference engine is embodied as programmed instructions executed within the user's wireless device.

Claim 3 (Previously Presented): The method of claim 1, wherein the processing of the sensor signals with a context inference engine is embodied as programmed instructions executed within a separate network server in response to signals from the user's wireless device.

Claim 4 (Previously Presented): The method of claim 1, wherein the sensor signals are selected from the group consisting of positioning signals, touch signals, audio signals, compass signals, ambient light signals, ambient temperature signals, three-axis acceleration signals, time signals, and the device's operational mode signals.

Claim 5 (Previously Presented): The method of claim 3, wherein the wireless device

offloads a portion of the processing of the sensor signals to a context inference engine to

the server.

Claim 6 (Previously Presented): The method of claim 1, wherein the selecting of an

activity is automatically performed in the wireless device.

Claim 7 (Previously Presented): The method of claim 1, wherein the selecting of an

activity performed by the user in the wireless device.

Claim 8 (Previously Presented): The method of claim 3, wherein the signals from the

user's wireless device are sent to the server without any user identification.

Claim 9 (Previously Presented): The method of claim 1, which further comprises:

        providing the recommendation in a separate server in response to context-activity

pair information received at the server from the user's wireless device.

Claim 10 (Previously Presented): The method of claim 9, which further comprises:

        maintaining the database as a context-activity pair database by the server;

        associating in the database the context-activity pair information with appropriate

recommendations made in the past to many users.

Claim 11 (Previously Presented): The method of claim 10, which further comprises:

    making new recommendations to the user in response to the context-activity pair

information submitted by the wireless device; and

    gathering the new recommendations and adding them to the database;

    whereby the variety, quality and pertinence of the recommendations in the

database grows as the recommendation system is used.

Claim 12 (Previously Presented): The method of claim 11, which further comprises:

    compiling statistical usage information about the recommendations and storing

the usage information in the database.

Claim 13 (Previously Presented): The method of claim 12, which further comprises:

    providing the statistical usage information to the wireless device accompanying

the recommendations.

Claim 14 (Previously Presented): The method of claim 13, which further comprises:

    filtering the recommendations received at the wireless device by using the

statistical usage information accompanying the recommendations.

Claim 15 (Previously Presented): The method of claim 1, wherein said providing step

further comprises:

    filtering the recommendations at the wireless device using statistical usage

information associated with the recommendations.

Claim 16 (Previously Presented): The method of claim 1, wherein said providing step further comprises:

accessing a history log of previous recommendations provided to the user;

filtering new recommendations from the previous recommendations and providing the new recommendations to the user.

Claim 17 (Previously Presented): The method of claim 1, wherein said providing step further comprises:

accessing a history log of previous recommendations provided to the user, including ratings of the previous recommendations;

filtering recommendations using the ratings and providing the filtered recommendations to the user.

Claim 18 (Previously Presented): The method of claim 1, which further comprises:

providing the recommendations to an application program.

Claim 19 (Previously Presented): The method of claim 3, which further comprises:

providing to the user control over the privacy of the user's information within the network server.

Claim 20 (Previously Presented): The method of claim 19, which further comprises:

maintaining the database as a context-activity pair database by the server, which

contains no personal information about the user;

associating in the database the context-activity pair information with appropriate

recommendations made in the past to many users.

Claim 21 (Previously Presented): The method of claim 20, which further comprises:

making new recommendations to the user in response to the context-activity pair

information submitted by the wireless device; and

gathering the new recommendations and adding them to the database without any

personal information about the user.                                                    ʻ

Claim 22 (Currently Amended): An apparatus to enable a wireless device to provide a

recommendations to its a user that are appropriate to the device's current environment,

comprising:

a processor;

a memory coupled to the processor, programmed to perform the steps of:

receiving sensor signals characterizing a current environment of the wireless

device;

processing the sensor signals with a context inference engine;

outputting a current context result from the processing by the context inference

engine;

forming a context-activity pair by selecting an activity and pairing it with the

current context result;

causing a database of recommendations to be searched using the context-activity

pair without user identification wherein the database of recommendations comprises a

table listing context-activity pairs each related to (i) a listing of service recommendations

and (ii) a listing of number times recommended for each service recommendation; and

providing recommendations to the user in response to the searching step.


Claim 23 (Previously Presented): The apparatus of claim 22, wherein the processing of

the sensor signals with a context inference engine is embodied as programmed

instructions executed within the user's wireless device.


Claim 24 (Previously Presented): The apparatus of claim 22, wherein the processing of

the sensor signals with a context inference engine is embodied as programmed

instructions executed within a separate network server in response to signals from the

user's wireless device.


Claim 25 (Currently Amended): A wireless device to provide recommendations to its a

user that are appropriate to the device's current environment, comprising:

a sensor for providing sensor signals as a metadata vector which represents the

current sensor signals and characterizes the current state of the wireless device

characterizing a current environment of the wireless device;

a context inference engine coupled to the sensor, for processing the sensor signals

said context inference engine providing a current context result from the processing;

a processor coupled to the context inference engine, for forming a context-activity

pair by selecting an activity and pairing it with the current context result;

a database coupled to the processor, for providing recommendations using the

context-activity pair without user identification wherein the database comprises a table

listing context-activity pairs each related to (i) a listing of service recommendations and

(ii) a listing of number times recommended for each service recommendation; and

an output device coupled to the database, for providing the recommendations to

the user in response to the context-activity pair.


Claim 26 (Currently Amended): A system to provide recommendations to the a user of a

wireless device that are appropriate to the device's current environment, comprising:

a sensor in the wireless device for providing sensor signals as a metadata vector

which representsing the a current sensor signals and characterizing a current environment

of the wireless device;

appending a message authentication code and digital signature to insure the

integrity of the metadata vector;

a processor coupled to the sensor, for forming pair information by selecting an

activity and pairing it the activity with current sensor information derived from said

sensor signals, said processor sending the pair information to a server;

a context inference engine in the server coupled to the wireless device, for

processing the context-activity pair information, said context inference engine providing

a current context result from the processing;

a database coupled to the context inference engine, for providing

recommendations using the activity and current result without user identification ~~without~~

~~user-identification~~ wherein the database comprises a table listing context-activity pairs

each related to (i) a listing of service recommendations and (ii) a listing of number times

recommended for each service recommendation; and

an output device in the wireless device and coupled to the database, for providing

recommendations to the user.


Claim 27 (Currently Amended): A business method to enable a wireless device to

provide recommendations to ~~its~~ a user that are appropriate to the device's current

environment, comprising:

a metadata vector which represents the current sensor signals characterizing a

current environment of the wireless device with a current context result;

processing of the sensor signals with a context inference engine embodied as

programmed instructions executed within a separate wireless network server in response

to signals from the user's wireless device;

appending a message authentication code and digital signature to insure the

integrity of the metadata vector;

forming a context-activity pair by selecting an activity and pairing ~~it~~ with the

current context result;

accessing a database of recommendations using the context-activity pair, the

database of recommendations excluding any user personal data; the database coupled to

the processor, for providing recommendations using the context-activity pair without user

identification wherein the database comprises a table listing context-activity pairs each

related to (i) a listing of service recommendations and (ii) a listing of number times

recommended for each service recommendation; and providing recommendations to the

wireless device from the database.

Claim 28 (Previously Presented): The business method of claim 27, which further

comprises:

gathering new recommendations and adding them to the database without

including any user personal data or old recommendations.

Claim 29 (Previously Presented): The business method of claim 27, which further

comprises:

compiling statistical usage information about the recommendations and storing

the usage information in the database.

Claim 30 (Previously Presented): The business method of claim 29, which further

comprises:

providing the statistical usage information to the wireless device accompanying

the recommendations.

Claim 31 (Previously Presented): The business method of claim 27, which further

comprises:

filtering the recommendations received at the wireless device by using the

statistical usage information accompanying the recommendations.

Claim 32 (Previously Presented): The business method of claim 27, which further

comprises:

accessing a history log of previous recommendations provided to the user;

filtering new recommendations from the previous recommendations and

providing the new recommendations to the user.

Claim 33 (Previously Presented): The business method of claim 27, which further

comprises:

accessing a history log of previous recommendations provided to the user,

including ratings of the previous recommendations;

filtering recommendations using the ratings and providing the filtered

recommendations to the user.

Claim 34 (Previously Presented): The business method of claim 27, which further

comprises:

providing the recommendations to an application program layer.

Claim 35 (Previously Presented): The business method of claim 28, which further

comprises: providing at least portions of the database to a third party service provider.

Claim 36 (Currently Amended): A method to enable a wireless device to provide

recommendations to its a user that are appropriate to the device's current environment,

comprising:

receiving sensor signals characterizing a current environment of the wireless

device;

processing the sensor signals with a context inference engine to produce a set of

current context results;

forming a set of context-activity pairs by selecting an activity and pairing it with

the set of current context results;

accessing a set of related service history items from a history log;

forming context-activity pair information from the set of current context results

and the set of related service history items;

searching a database of recommendations using the context-activity pair without

user identification wherein the database of recommendations comprises a table listing

context-activity pairs each related to (i) a listing of service recommendations and (ii) a

listing of number times recommended for each service recommendation; and

providing recommendations to the user in response to the searching step.


Claim 37 (Previously Presented): The method of claim 36, which further comprises:

providing the recommendation in a separate wireless network server in response

to context-activity pair information received at the server from the user's wireless device.


Claim 38 (Previously Presented): The method of claim 37, which further comprises:

maintaining the database as a context-activity pair database by the separate

wireless network server;

associating in the database the context-activity pair information with appropriate

recommendations made in the past to many users.

Claim 39 (Previously Presented):  The method of claim 38, which further comprises:

making new recommendations to the user in response to the context-activity pair

information submitted by the wireless device; and

gathering the new recommendations and adding them to the database;

whereby the variety, quality and pertinence of the recommendations in the

database grows as the recommendation system is used.

Claim 40 (Previously Presented): The method of claim 39, which further comprises:

compiling statistical usage information about the recommendations and storing

the usage information in the database.

Claim 41 (Previously Presented): The method of claim 40, which further comprises:

providing the statistical usage information to the wireless device accompanying

the recommendations.

Claim 42 (Previously Presented): The method of claim 41, which further comprises:

filtering the recommendations received at the wireless device by using the

statistical usage information accompanying the recommendations.

Claim 43 (Previously Presented):  The method of claim 42, wherein said providing step

further comprises:

    filtering the recommendations at the wireless device using statistical usage

information associated with the recommendations.

Claim 44 (Previously Presented): The method of claim 43, wherein said providing step

further comprises:

    accessing a history log of previous recommendations provided to the user;

    filtering new recommendations from the previous recommendations and

providing the new recommendations to the user.

Claim 45 (Previously Presented): The method of claim 44, wherein said providing step

further comprises:

    accessing a history log of previous recommendations provided to the user,

including ratings of the previous recommendations;

    filtering recommendations using the ratings and providing the filtered

recommendations to the user.

Claim 46 (Currently Amended): A method to enable a wireless device to provide

recommendations to its a user that are appropriate to the device's current environment,

comprising:

receiving sensor signals as a metadata vector characterizing a current environment of the wireless device;

processing the sensor signals with a context inference engine utilizing adaptive and continuous learning processes;

outputting a current context result from the sensor processing by the context inference engine;

selecting a user activity and pairing the activity with the current context result to form a context-activity pair;

searching a database of context-activity pairs in a recommendation system while maintaining the privacy of the user wherein the database comprises a table listing context activity pairs each related to (i) a listing of service recommendations and (ii) a listing of number times recommended for each service recommendation;

providing recommendations to the user relative to the context-activity pair in response to the searching step;

filtering the recommendations using an algorithm to identify new and significant information as new recommendations; and

displaying the new recommendations to the user.

Claim 47 (Previously Presented): The method of Claim 46 further comprising:

forming a metadata vector of the sensor signals for processing in the device or transmission to a server for processing.

Claim 48 (Previously Presented): The method of Claim 46 further comprising:

establishing a privacy user interface to a privacy control element enabling the user

to set privacy policies related to access to the context inference engine, and to alert the

user that an application program is attempting to register to receive the user's private

context awareness information.


Claim 49 (Previously Presented): The method of Claim 46 further comprising:

excluding user personal data from the database of context-activity pairs.


Claim 50 (Previously Presented): The method of Claim 46 further comprising:

providing context activity pair data sets in the database to third parties for market

research.


Claim 51 (Currently Amended): A method to enable a wireless device to provide

recommendations to it's a user that are appropriate to the device's current environment,

comprising:

receiving sensor signals as a metadata vector characterizing a current environment

of the wireless device;

appending a message authentication code and digital signature to insure the

integrity of the metadata vector;

processing the sensor signals with a context inference engine to produce a set of

current context results;

forming a set of context-activity pairs by selecting an activity and pairing it with

the set of current context results;

searching a set of related service history items from a history log using the set of

context-activity pairs;

forming context-activity pair information from the set of context-activity pair and

the set of related service history items;

searching a database of recommendations using the context-activity pair

information without user identification wherein the database of recommendations

comprises a table listing context-activity pairs each related to (i) a listing of service

recommendations and (ii) a listing of number times recommended for each service

recommendation; and providing recommendations to the user in response to the searching

step.


Claim 52 (Currently Amended): The method of Claim 1 further comprising:

forming a database of context-activity pairs and related service recommendations

in a remote server;

controlling access of applications to private context information via a privacy

control block;

matching contact-activity pairs in the database similar to the pair received from

the context inference engine; and

providing alternative recommendations to the user for the selection of a context-

activity using a recommendation algorithm in response to the searching step.


Claim 53 (Currently Amended):The apparatus of Claim 22 wherein the processor further

comprises:

forming a database of context-activity pairs and related service recommendations

in a remote server;

controlling access of applications to private context information via a privacy

control block; and

providing alternative recommendations to the user for the selection of a context-

activity using a recommendation algorithm in response to the searching step.


Claim 54 (Currently Amended): The wireless device of Claim 25 further comprising:

means for matching contact-activity pairs in the database similar to the pair

received from the context inference engine; and

the output device providing alternative recommendations to the user in response

to the context-activity pair.


Claim 55 (Currently Amended): The system of Claim 26 further comprises

Tthe database includes context-activity pairs and related service

recommendations;

a privacy control block controlling access of applications to private context

information; and

the output device provides alternative recommendations to the user.


Claim 56 (Previously Presented): The business method of Claim 27 further comprising:

forming a database of context-activity pairs and related service recommendations;

controlling access of applications to private context information via a privacy

control block; and wherein

alternative recommendations are provided to the wireless device from the

database for the selection of a context- activity using a recommendation algorithm.


Claim 57 (Previously Presented): The method of Claim 36 further comprising:

forming a database of context-activity pairs and related service recommendations;

controlling access of applications to private context information via a privacy

control block;

matching contact-activity pairs in the database similar to the pair received from

the context inference engine; and wherein

alternative recommendations are provided to the wireless device from the

database for the selection of a context- activity using a recommendation algorithm.


Claim 58 (Previously Presented): The method of Claim 46 further comprising:

forming a database of context-activity pairs and related service recommendations;

controlling access of applications to private context information via a privacy

control block; and wherein

alternative recommendations are provided to the user for the selection of a context

activity using a recommendation algorithm.


Claim 59 (Previously Presented): The method of claim 56 wherein at least one source of

services matching the context-activity pair received from the wireless device

Claim 60 (Previously Presented): The method of claim 18 wherein the application

program receives recommendations from application program interfaces for further

processing without showing the recommendation to the user.

Claim 61 (Previously Presented): The method of claim 11 wherein new recommendations

generated by the server are added to the database for statistical purposes and expanded

user selections.

Claim 62 (Previously Presented): The method of Claim 1 wherein a metadata vector

represents the current sensor signals; characterizes the current state of the wireless

device, and combined with the user activity as the context-activity pair. A current

environment of the current state of the wireless device

### *Reasons for Allowance*

4.     Claims 1-62 are allowed over the prior art made of record.

5.     The following is a statement of reasons for allowance:

       The prior art of record (Robarts et al. -U.S. Pub. No. 2002/0083025 A1- and-

Moore et al. -U.S Pub. No. 2001/0039546 A1-and- Brunk et al. -U.S. Pub. No.

2002/0126872 A1) do not disclose, teach, or suggest the claimed limitations of (in

combination with all other features in the claim), searching a database of

recommendations using the context-activity pair without user identification wherein the

database comprises a table listing context-activity pairs each related to (i) a listing of service recommendations and (ii) a listing of number times recommended for each service recommendation, as claimed in claims 1, 22, and 36.

Claims 2-21, 52, 60-62, 23-24, 53, 37-45, 57 are allowed over the prior art made of record, because they are dependent from the allowed independent claims 1, 22, and 36, respectively.

The prior art of record (Robarts et al. -U.S. Pub. No. 2002/0083025 A1- and- Moore et al. -U.S Pub. No. 2001/0039546 A1-and- Brunk et al. -U.S. Pub. No. 2002/0126872 A1) do not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim), searching a database of recommendations using the context-activity pair without user identification wherein the database comprises a table listing context-activity pairs each related to (i) a listing of service recommendations and (ii) a listing of number times recommended for each service recommendation, as claimed in claims 25, and 46.

The prior art of record (Robarts et al. -U.S. Pub. No. 2002/0083025 A1- and- Moore et al. -U.S Pub. No. 2001/0039546 A1-and- Brunk et al. -U.S. Pub. No. 2002/0126872 A1) do not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim), appending a message authentication code and digital signature to insure the integrity of the metadata vector; searching a database of recommendations using the context-activity pair without user identification

wherein the database comprises a table listing context-activity pairs each related to (i) a

listing of service recommendations and (ii) a listing of number times recommended for

each service recommendation, as claimed in claims 26, and 51.

The prior art of record (Robarts et al. -U.S. Pub. No. 2002/0083025 A1- and-

Moore et al. -U.S Pub. No. 2001/0039546 A1-and- Brunk et al. -U.S. Pub. No.

2002/0126872 A1) do not disclose, teach, or suggest the claimed limitations of (in

combination with all other features in the claim), for providing recommendations using

the context-activity pair without user identification wherein the database comprises a

table listing context-activity pairs each related to (i) a listing of service recommendations

and (ii) a listing of number times recommended for each service recommendation, as

claimed in claim 27.

Claims 28-35, 56, and 59 are allowed over the prior art made of record, because

they are dependent from the allowed independent claim 27.

### *Conclusion*

6.      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Neveen Abel-Jalil whose telephone number is 571-272-

4074. The examiner can normally be reached on 8:30AM-5: 30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dov Popovici can be reached on 571-272-4038. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

Neveen Abel-Jalil
March 31, 2005

**CHARLES RONES**
**PRIMARY EXAMINER**